

PICEAS – Pacific Island Cetacean and Ecosystem Assessment Survey

Weekly Report, September 29 – October 5, 2005

Lisa T. Ballance – Cruise Leader

Here's an interesting story. Johnston Atoll lies at 16.8° N, 169.5° W. It is arguably one of the most remote atolls on the planet. Essentially centered in the middle of the largest ocean, there are plenty of seabirds who would like to call it home – and did. Then came the world wars, during which time many Pacific Islands were borrowed for military purposes, and following that, the need to dispose of war inventions – Agent Orange, Nerve and Mustard gas among them. These three were slated for destruction and Johnston, with its remote location, almost non-stop trades, and well over 1,000 miles from the nearest land downwind, was one of the sites chosen for an incineration plant. During its human heyday, some 1,000 people called it home. They worked 6-day weeks incinerating barrel after barrel of chemical munitions and then, one day, it was all gone. Having no further purpose for a human community, the powers that were tore down and carted away most of the island's structures designed to house, feed, entertain, and otherwise support its humans, and flew the last of the people away, leaving the island once again to its original inhabitants.

It is now nearly half a decade since the turnover and this week, the McArthur II made a site visit. Two of us worked at Johnston 13 years ago, and these two snapshots in time have provided an interesting perspective. If you are one of those who hope for recovery of wildlife, this is a feel-good story. The seabirds have begun to take their atoll back. Armed with data sheets and digital cameras, five teams of scientists set out in the morning to spend the rest of the day conducting a rapid ecological assessment of each of four islands for the US Fish and Wildlife Service. We found dramatic increases in breeding numbers for 3 seabird species, re-distribution for 5, and more or less stable populations for 6. In addition to assessing the seabirds, we collected a complete photo-documentation record of the plant species and photographed critical seawalls. There was time left at the end of the day for most to enjoy swimming, snorkeling, and even refreshments from a makeshift stand set up under some palms. The team effort that came together for this day was impressive - special thanks to the Chief Boatswain, Senior Survey Tech, Chief Steward, all the Coxswains and lookouts, the officers standing watch on the bridge, and especially, to the Commanding Officer, for facilitating this visit.

Oh yes, the cetacean survey ... We last left our heroes in the midst of a tropical desert with calm seas all around. Oh – and then there were the last few hours of the last day covered by last week's report. Immense squalls engulf us as visual effort shuts down, just in time to drench the acousticians during array recovery. Three hundred meters (... down, that is) into the evening CTD cast the winds rocket to a 50-knot gust and we astutely decide to cancel operations. Bottle 12 takes a beating but all else (including our crew!) are safe and sound after the recovery and we steam away into the night with plans for a nap tomorrow. Tomorrow turns into a weather day with full-force trades (the only good thing about this day is Yin's smoothies complete with room service), but the day

after that, our weather has returned to the sublime and conditions stay fine ever after. Despite this, hour after hour after, day after day go by with no cetaceans in sight. (By the way, not even Johnston could help – which was eerily empty of cetaceans during our circumnavigation last week – one *Ziphius* sighting, and two unidentified and distant dolphins.) It was our darkest hour (made darker by the fact that Lisa spilled coffee grounds all over - of all things - Richard's green book). Then, from the radio a small and meek voice – is it Shannon? (who is Shannon? Oh yes! The one who works silently all the time): “I think I have a dolphin school that just passed the beam.” And presto! The acousticians pull us out of a slump. (There has been some debate as to whether this counts as a “sighting.”) And so, our week ends with but four cetacean ... detections: Acousticians - 1; Guest Independent Observer - 2; and hey! Rookie Observer 234 - 1 (Way to go Lilian!). Please – family and friends of our marine mammal observers and acousticians, send them encouraging words, hearts and flowers. They are getting despondent and we fear for their sanity.



The intrepid scientific team of Leg 3 (more mammal observers than marine mammals).

Marine Mammal Sighting Summary

092905	0717	N16:47.25 W171:41.79	117.1 nmi	5.4
	1914	N15:05.52 W172:44.10		
093005	1703	N14:23.65 W171:56.86	19.6 nmi	5.0
	1908	N14:40.30 W171:46.20		

100105	0717	N14:42.92	W171:44.58	103.9 nmi	3.8
	1806	N16:11.04	W170:47.49		
100305	0712	N15:19.39	W170:00.60	119.6 nmi	4.6
	1906	N13:35.81	W171:07.56		
100405	0723	N12:40.72	W170:39.80	102.1 nmi	4.2
	1900	N14:10.88	W169:41.16		
100505	0702	N13:35.46	W168:50.37	121.9 nmi	4.2
	1903	N11:57.97	W170:02.38		

CODE	SPECIES	TOT#
002	Stenella attenuata (offshore)	1
015	Steno bredanensis	1
036	Globicephala macrorhynchus	1
061	Ziphius cavirostris	1
177	unid. small delphinid	1
	TOTAL	5

Acoustics Squeakly Report (Shannon Rankin & Sara Heimlich)

Two notable events happened this week in the acoustics world. First, we had an actual real-live acoustic detection, and we were able to successfully assist the visual observers in finding a group of rough-toothed dolphins. Second, we had a FULL day without any major calamities, AND the array sounded GOOD! Unfortunately, we did not hear a single peep or squeak on this day, but it sure felt great to listen to the relative silence of the ship without the mysterious noise that has been disturbing us for the past few weeks. Who knows, maybe there is hope for us after all!

Birder Blurp (Michael Force & Sophie Webb)

This week felt dreadfully slow after last week's exciting exposure to fall migration in the central Pacific. If our birding brethren on the *David Starr Jordan* care to experience truly low densities—not the ersatz birding doldrums they so painfully had to endure during their avian-rich transects through the California Current—we welcome them to experience the deep blue water of the central tropical Pacific. Their astounding report of 12 to 37 birds per day or, as they so succinctly put it, a staggering 2(!) birds per hour, represent sighting rates we can only dream of. Twelve to 37 birds per day is a “stop the presses” week for us, and that is including birds seen outside the 300 metre transect! With a sighting rate of approximately 0.5 birds per hour, you guys can quitcherbellyachin. Our stop at Johnston Atoll was seabird heaven, boosting our weekly species total to 31. Several of these were migrant shorebirds and additional seabirds missed during our shipboard transects. Deleting these from the list reduces the weekly total to our average of 22 species. However, overall abundance has hit rock bottom with very few birds inside or outside the 300 metre transect, roughly 1100 birds all week (including feeding flocks). The door has slammed shut on southbound Short-tailed and Sooty Shearwaters—we saw no Sooties and only a single small flock of Short-taileds.

Mottled Petrels, a gorgeous *Pterodroma* whose stunning beauty has converted at least one cetacean-starved mammal observer over to the birding side, are on the move south to their nesting islands off New Zealand. Small numbers were seen almost daily, occasionally eclipsing the ubiquitous Black-winged Petrel. After a 32-day absence, a peripatetic Tahiti Petrel seen this week was a surprise. Additional avian treats this week include single Stejneger's and Herald Petrels, a couple of Hawaiian Petrels, Pomarine Jaeger, and South Polar Skua. Lastly, thanks to everyone, Chief Scientist, Cruise Leader, and the entire crew of the McArthur II for a unique opportunity to visit Johnston Atoll.

Biopsy Weekly Report (Suzanne Yin and Robert Pitman)

	Weekly Total	Cruise Total
Bryde's whales	0	1
Pilot whales	0	2
Humpback whales	0	3
Melon-headed whales	0	40 (<i>disregard previous totals for this</i>
		<i>species and use this one)</i>
Sperm whales	0	4
False killer whales	0	18
Spotted dolphins	0	2
Spinner dolphins	0	3
Rough-toothed dolphins	0	2
Bottlenose dolphins	0	11
TOTAL	0	86

Photo-ID Weekly Report (Chris Cutler and Beth Goodwin)

	Weekly Total	Cruise Total
Humpback whale fluke IDs	0	4
Bryde's whale	0	4
Melon-headed whale (# groups)	0	3
False killer whales (# groups)	0	3
Pilot whales (# groups)	1	12
Striped dolphins (# groups)	0	2
Spotted dolphins (# groups)	1	4
Spinner dolphins (# groups)	0	5
Fraser's dolphins (# groups)	0	2
Killer whales (# groups)	0	1

Risso's dolphins (# groups)	0	1
Rough-toothed dolphins (# groups)	0	1

Oceanographic Data Collections (Mindy Kelly and Lacey O'Neal)

DATE RANGE	DAY	CTD	XBT	Bongo	Manta
<div> PICEAS05 Leg 3 9/29 to 10/05 </div>	Thursday	2	3	1	1
	Friday	1	2	1	1
	Saturday	2	3	1	1
	Sunday	0	0	0	0
	Monday	2	3	1	1
	Tuesday	2	3	1	1
	Wednesday	2	3	1	1
	Totals	12	18	7	7

The past week went by in a flash with the help of our mid week visit to Johnston Atoll. Sunday was our visit to the island and trading in CTD casts and net tows for terrestrial surveillance was no problem for us. The island was a great break, bringing us back to the ship with a fresh outlook over the sea (we may need to go back there this week!). For the past week, we fell short of three CTD casts, one bongo and one manta tow. Water temperatures have remained around 28.5°C (83.3°F) and the thermocline around 75 meters. Net tow operations continue, smooth as ever, entertaining us with small offerings each evening.

Dipnet Chronicles (Robert Pitman and Jim Cotton)

Bleak week. For most of our hour-a-night at the rail these last seven days, we have almost nothing to show: a handful of juvenile flyingfishes and a few myctophids. Fishing down the food chain. The one shining light was our evening off Johnston Island. Flyingfishes at sea are fairly small: 8-10 inches, but in around islands there be monsters: 18-20 inches, or more. There are lots of predators around islands, and boobies in particular specialize in eating flyingfish, but they have trouble choking down anything larger than 12-14 inches. So for nearshore flyingfish: big is best. We caught 10 flyingfish at Johnston, including 4, 2-handers. One was the first *Cheilopogon poecilopterus* we have ever caught or seen on these cruises - a big guy, sporting giant purple wings with black spots. Paging Dr. Seuss.